

CLAIMS

1. A broadcast data transmission/reception system that
5 includes a transmitter, a first receiver and a second receiver,
the transmitter transmitting broadcast data including time
information indicating a reproduction start time, and both the
first and second receivers trying to obtain the broadcast data,
wherein
10 the transmitter further transmits, at least a
predetermined amount of time prior to transmitting the broadcast
data, substitutive broadcast data and a substitutive identifier
one or more times, the substitutive broadcast data including
a same content as the broadcast data and time information
15 indicating the reproduction start time, and the substitutive
identifier being for identifying the substitutive broadcast data,
and
the second receiver further includes:
a storing unit that stores therein an identifier specifier
20 for specifying the substitutive identifier;
a broadcast data obtaining unit operable to try to obtain
the substitutive broadcast data based on the substitutive
identifier specified by the identifier specifier; and
a reproducing unit operable to reproduce, at the
25 reproduction start time, one of the broadcast data and the
substitutive broadcast data if successfully obtained.

2. The broadcast data transmission/reception system according to Claim 1, wherein

the broadcast data obtaining unit includes:

a recording medium; and

5 a recording subunit operable to record, on the recording medium, whichever of the substitutive broadcast data and the broadcast data is obtained first, and

the reproducing unit reproduces, at the reproduction start time, whichever of the substitutive broadcast data and the
10 broadcast data is recorded on the recording medium.

3. The broadcast data transmission/reception system according to Claim 2, wherein

each of the broadcast data and the substitutive broadcast
15 data includes a plurality of data elements,

the broadcast data obtaining unit includes a judging subunit for judging whether the broadcast data or the substitutive broadcast data includes all the data elements, every time the broadcast data obtaining unit receives the broadcast
20 data or the substitutive broadcast data, and

the broadcast data obtaining unit obtains the broadcast data or the substitutive broadcast data only when a judgment result by the judging subunit is affirmative.

25 4. The broadcast data transmission/reception system according to Claim 1, wherein

the transmitter transmits pieces of the broadcast data

having different reproduction start times respectively, and the transmitter further transmits, at least the predetermined amount of time prior to transmitting the pieces of the broadcast data, pieces of the substitutive broadcast data respectively
5 corresponding to the pieces of the broadcast data one or more times, each piece of the substitutive broadcast data including a same content as a corresponding piece of the broadcast data and time information indicating a same reproduction start time as a reproduction start time of the corresponding piece of the
10 broadcast data,

the broadcast data obtaining unit tries to obtain the piece of the substitutive broadcast data based on the substitutive identifier specified by the identifier specifier, and

the reproducing unit reproduces, at the reproduction start
15 time, one of the piece of the broadcast data and the piece of the substitutive broadcast data if successfully obtained.

5. The broadcast data transmission/reception system according to Claim 4, wherein

20 the broadcast data obtaining unit includes:
a recording medium;

a recording and judging subunit operable to record, on the recording medium, each piece of the substitutive broadcast data if successfully obtained, and judge whether a piece of the
25 substitutive broadcast data having a same reproduction start time as a piece of the broadcast data is recorded on the recording medium; and

a recording control unit operable to record the piece of the broadcast data on the recording medium only when a judgment result by the recording and judging subunit is negative, and the reproducing unit reproduces, at the reproduction start time, whichever of the piece of the broadcast data and the piece of the substitutive broadcast data is recorded on the recording medium.

6. The broadcast data transmission/reception system according to Claim 5, wherein

each of the plural pieces of the broadcast data and the plural pieces of the substitutive broadcast data includes a plurality of data elements,

the broadcast data obtaining unit includes a judging subunit for judging whether the broadcast data or the substitutive broadcast data includes all the data elements, every time the broadcast data obtaining unit receives the broadcast data or the substitutive broadcast data, and

the broadcast data obtaining unit obtains the broadcast data or the substitutive broadcast data only when a judgment result by the judging subunit is affirmative.

7. A broadcast data transmission/reception system that includes a transmitter, a first receiver and a second receiver, the transmitter transmitting broadcast data including time information indicating a first reproduction start time, and both the first and second receivers trying to obtain the broadcast

data, wherein

the broadcast data is a piece of still images that constitute a moving picture and have sequential reproduction start times respectively,

5 the transmitter further transmits, at least a predetermined amount of time prior to transmitting the broadcast data, substitutive broadcast data and a substitutive identifier one or more times, the substitutive broadcast data being a piece of still images that constitute the moving picture, and including
10 time information indicating a second reproduction start time that is next to the first reproduction start time among the sequential reproduction start times, and the substitutive identifier being for identifying the substitutive broadcast data, and

15 the second receiver further includes:

a storing unit that stores therein an identifier specifier for specifying the substitutive identifier;

a broadcast data obtaining unit operable to try to obtain the substitutive broadcast data based on the substitutive
20 identifier specified by the identifier specifier; and

a reproducing unit operable to reproduce, at the first reproduction start time, the broadcast data if successfully obtained, and reproduce, at the second reproduction start time, the substitutive broadcast data if successfully obtained.

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8. A broadcast data transmission/reception system that includes a transmitter, a first receiver and a second receiver,

the transmitter transmitting broadcast data including time information indicating a reproduction start time, and both the first and second receivers trying to obtain the broadcast data, wherein

5 the broadcast data includes a plurality of data elements, the transmitter further transmits, at least a predetermined amount of time prior to transmitting the broadcast data, substitutive broadcast data and a substitutive identifier one or more times, the substitutive broadcast data including
10 a predetermined member among the data elements and time information indicating the reproduction start time, and the substitutive identifier being for identifying the substitutive broadcast data, and

the second receiver further includes:

15 a storing unit that stores therein an identifier specifier for specifying the substitutive identifier;

a broadcast data obtaining unit operable to try to obtain the substitutive broadcast data based on the substitutive identifier specified by the identifier specifier; and

20 a reproducing unit operable to reproduce, at the reproduction start time, only the broadcast data if successfully obtained, and reproduce, at the reproduction start time, the substitutive broadcast data in a case where the broadcast data obtaining unit has failed to obtain the broadcast data and
25 succeeded in obtaining the substitutive broadcast data.

9. The broadcast data transmission/reception system

according to Claim 8, wherein

the broadcast data constitutes a GOP (Group of Picture)
encoded by MPEG (Moving Picture Expert Group) method, and the
substitutive broadcast data constitutes an I-picture, which is
5 a data element included in the GOP.

10. The broadcast data transmission/reception system
according to Claim 8, wherein

the broadcast data constitutes a GOP (Group of Picture)
10 encoded by MPEG (Moving Picture Expert Group) method, and the
substitutive broadcast data constitutes an I-picture and a
P-picture, which are data elements included in the GOP.

11. A second receiver that tries to obtain broadcast data
15 including time information indicating a reproduction start time,
a first receiver trying to obtain the broadcast data, wherein

the second receiver further tries to obtain substitutive
broadcast data and a substitutive identifier which are
transmitted one or more times at least a predetermined amount
20 of time prior to a time when the broadcast data is transmitted,
the substitutive broadcast data including a same content as the
broadcast data and time information indicating the reproduction
start time, and the substitutive identifier being for identifying
the substitutive broadcast data, and

25 the second receiver further includes:

a storing unit that stores therein an identifier specifier
for specifying the substitutive identifier;

a broadcast data obtaining unit operable to try to obtain the substitutive broadcast data based on the substitutive identifier specified by the identifier specifier; and

5 a reproducing unit operable to reproduce, at the reproduction start time, one of the broadcast data and the substitutive broadcast data if successfully obtained.

12. The second receiver according to Claim 11, wherein the broadcast data obtaining unit includes:

10 a recording medium; and

a recording subunit operable to record, on the recording medium, whichever of the substitutive broadcast data and the broadcast data is obtained first, and

15 the reproducing unit reproduces, at the reproduction start time, whichever of the substitutive broadcast data and the broadcast data is recorded on the recording medium.

13. The second receiver according to Claim 12, wherein each of the broadcast data and the substitutive broadcast data includes a plurality of data elements,

20 the broadcast data obtaining unit includes a judging subunit for judging whether the broadcast data or the substitutive broadcast data includes all the data elements, every time the broadcast data obtaining unit receives the broadcast data or the substitutive broadcast data, and

25 the broadcast data obtaining unit obtains the broadcast data or the substitutive broadcast data only when a judgment

result by the judging subunit is affirmative.

14. The second receiver according to Claim 11, wherein
the second receiver receives pieces of the broadcast data
5 having different reproduction start times respectively, and
further receives pieces of the substitutive broadcast data
corresponding to the pieces of the broadcast data respectively,
each piece of the substitutive broadcast data being transmitted
one or more times at least a predetermined amount of time prior
10 to a time when the broadcast data is transmitted, and including
a same content as a corresponding piece of the broadcast data
and time information indicating a same reproduction start time
as a reproduction start time of the corresponding piece of the
broadcast data,

15 the broadcast data obtaining unit tries to obtain the piece
of the substitutive broadcast data based on the substitutive
identifier specified by the identifier specifier, and
the reproducing unit reproduces, at the reproduction start
time, one of the piece of the broadcast data and the piece of
20 the substitutive broadcast data if successfully obtained.

15. The second receiver according to Claim 14, wherein
the broadcast data obtaining unit includes:

a recording medium;

25 a recording and judging subunit operable to record, on
the recording medium, each piece of the substitutive broadcast
data if successfully obtained, and judge whether a piece of the

substitutive broadcast data having a same reproduction start time as a piece of the broadcast data is recorded on the recording medium; and

5 a recording control unit operable to record the piece of the broadcast data on the recording medium only when a judgment result by the recording and judging subunit is negative, and the reproducing unit reproduces, at the reproduction start time, which ever of the piece of the broadcast data and the piece of the substitutive broadcast data is recorded on the recording
10 medium.

16. The second receiver according to Claim 15, wherein each of the plural pieces of the broadcast data and the plural pieces of the substitutive broadcast data includes a
15 plurality of data elements,

the broadcast data obtaining unit includes a judging subunit for judging whether the broadcast data or the substitutive broadcast data includes all the data elements, every time the broadcast data obtaining unit receives the broadcast
20 data or the substitutive broadcast data, and

the broadcast data obtaining unit obtains the broadcast data or the substitutive broadcast data only when a judgment result by the judging subunit is affirmative.

25 17. A second receiver that tries to obtain broadcast data including time information indicating a reproduction start time, a first receiver trying to obtain the broadcast data, wherein

the broadcast data is a piece of still images that constitute a moving picture and have sequential reproduction start times respectively,

the second receiver further receives substitutive
5 broadcast data and a substitutive identifier which are transmitted one or more times at least a predetermined amount of time prior to a time when the broadcast data is transmitted, the substitutive broadcast data being a piece of still images that constitute the moving picture, and including time
10 information indicating a second reproduction start time that is next to the first reproduction start time among the sequential reproduction start times, and the substitutive identifier being for identifying the substitutive broadcast data, and

the second receiver further includes:

15 a storing unit that stores therein an identifier specifier for specifying the substitutive identifier;

a broadcast data obtaining unit operable to try to obtain the substitutive broadcast data based on the substitutive identifier specified by the identifier specifier; and

20 a reproducing unit operable to reproduce, at the first reproduction start time, the broadcast data if successfully obtained, and reproduce, at the second reproduction start time, the substitutive broadcast data if successfully obtained.

25 18. A second receiver that tries to obtain broadcast data including time information indicating a reproduction start time, a first receiver trying to obtain the broadcast data, wherein

the broadcast data includes a plurality of data elements,
the second receiver further receives substitutive
broadcast data and a substitutive identifier which are
transmitted one or more times at least a predetermined amount
5 of time prior to a time when the broadcast data is transmitted,
the substitutive broadcast data including a predetermined member
among the data elements and time information indicating the
reproduction start time, and the substitutive identifier being
for identifying the substitutive broadcast data, and

10 the second receiver further includes:

a storing unit that stores therein an identifier specifier
for specifying the substitutive identifier;

a broadcast data obtaining unit operable to try to obtain
the substitutive broadcast data based on the substitutive
15 identifier specified by the identifier specifier; and

a reproducing unit operable to reproduce, at the
reproduction start time, only the broadcast data if successfully
obtained, and reproduce, at the reproduction start time, the
substitutive broadcast data in a case where the broadcast data
20 obtaining unit has failed to obtain the broadcast data and
succeeded in obtaining the substitutive broadcast data.

19. The second receiver according to Claim 18, wherein
the broadcast data constitutes a GOP (Group of Picture)
25 encoded by MPEG (Moving Picture Expert Group) method, and the
substitutive broadcast data constitutes an I-picture, which is
a data element included in the GOP.

20. The second receiver according to Claim 18, wherein
the broadcast data constitutes a GOP (Group of Picture)
encoded by MPEG (Moving Picture Expert Group) method, and the
5 substitutive broadcast data constitutes an I-picture and a
P-picture, which are data elements included in the GOP.

21. A transmitter, comprising:
a first transmission unit operable to transmit broadcast
10 data including time information indicating a reproduction start
time, both a first receiver and a second receiver trying to obtain
the broadcast data; and
a second transmission unit operable to transmit, at least
15 a predetermined amount of time prior to a time when the first
transmission unit transmits the broadcast data, substitutive
broadcast data and a substitutive identifier one or more times,
the substitutive broadcast data including a same content as the
broadcast data and time information indicating the reproduction
start time.

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22. A transmitter, comprising:
a first transmission unit operable to transmit broadcast
data including time information indicating a first reproduction
start time, the broadcast data being a piece of still images
25 that constitute a moving picture and have sequential reproduction
start times respectively, and both a first receiver and second
receiver trying to obtain the broadcast data; and

a second transmission unit operable to transmit, at least a predetermined amount of time prior to a time when the first transmission unit transmits the broadcast data, substitutive broadcast data and a substitutive identifier one or more times, the substitutive broadcast data being a piece of still images that constitute the moving picture, and including time information indicating a second reproduction start time that is next to the first reproduction start time among the sequential reproduction start times, the substitutive identifier being for identifying the substitutive broadcast data, and only the second receiver trying to obtain the substitutive broadcast data and the substitutive identifier.

23. A transmitter, comprising:

a first transmission unit operable to transmit broadcast data including time information indicating a reproduction start time, the broadcast data including a plurality of data elements, and both a first receiver and a second receiver trying to obtain the broadcast data; and

a second transmission unit operable to transmit, at least a predetermined amount of time prior to a time when the first transmission unit transmits the broadcast data, substitutive broadcast data and a substitutive identifier one or more times, the substitutive broadcast data including a predetermined member among the data elements and time information indicating the reproduction start time, the substitutive identifier being for identifying the substitutive broadcast data, and only the second

receiver trying to obtain the substitutive broadcast data.

24. The transmitter according to Claim 23, wherein
the broadcast data constitutes a GOP (Group of Picture)
5 encoded by MPEG (Moving Picture Expert Group) method, and the
substitutive broadcast data constitutes an I-picture, which is
a data element included in the GOP.

25. The transmitter according to Claim 23, wherein
10 the broadcast data constitutes a GOP (Group of Picture)
encoded by MPEG (Moving Picture Expert Group) method, and the
substitutive broadcast data constitutes an I-picture and a
P-picture, which are data elements included in the GOP.

15 26. The broadcast data transmission/reception method used for
a broadcast data transmission/reception system that includes
a transmitter, a first receiver and a second receiver, the
transmitter transmitting broadcast data including time
information indicating a reproduction start time, both the first
20 and second receivers trying to obtain the broadcast data, and
the broadcast data transmission/reception method comprising
steps of:

transmitting, by the transmitter, substitutive broadcast
data and a substitutive identifier one or more times at least
25 a predetermined amount of time prior to transmitting the
broadcast data, the substitutive broadcast data including a same
content as the broadcast data and time information indicating

the reproduction start time, and the substitutive identifier being for identifying the substitutive broadcast data;

trying, by the second receiver that includes a storing unit for storing therein an identifier specifier for specifying the substitutive identifier, to obtain the substitutive broadcast data based on the substitutive identifier specified by the identifier specifier; and

reproducing, at the reproduction start time, one of the broadcast data and the substitutive broadcast data if successfully obtained.

27. A broadcast data transmission/reception method used for a broadcast data transmission/reception system that includes a transmitter, a first receiver and a second receiver, the transmitter transmitting broadcast data including time information indicating a first reproduction start time, the broadcast data being a piece of still images that constitute a moving picture and have sequential reproduction start times respectively, both the first and second receivers trying to obtain the broadcast data, and the broadcast data transmission/reception method comprising steps of:

transmitting, by the transmitter, substitutive broadcast data and a substitutive identifier one or more times at least a predetermined amount of time prior to transmitting the broadcast data, the substitutive broadcast data being a piece of still images that constitute the moving picture, and including time information indicating a second reproduction start time

that is next to the first reproduction start time among the sequential reproduction start times, and the substitutive identifier being for identifying the substitutive broadcast data;

5 trying, by the second receiver that includes a storing unit for storing therein an identifier specifier for specifying the substitutive identifier, to obtain the substitutive broadcast data based on the substitutive identifier specified by the identifier specifier, and to obtain the broadcast data
10 based on the identifier; and

reproducing, at the first reproduction start time, the broadcast data if successfully obtained, and reproducing, at the second reproduction start time, the substitutive broadcast data if successfully obtained.

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28. A broadcast data transmission/reception method used for a broadcast data transmission/reception system that includes a transmitter, a first receiver and a second receiver, the transmitter transmitting broadcast data including time
20 information indicating a reproduction start time, the broadcast data including a plurality of data elements, both the first and second receivers trying to obtain the broadcast data, and the broadcast data transmission/reception method comprising steps of:

25 transmitting, by the transmission system, substitutive broadcast data and a substitutive identifier one or more times at least a predetermined amount of time prior to transmitting

the broadcast data, the substitutive broadcast data including a predetermined member among the data elements and time information indicating the reproduction start time, and the substitutive identifier being for identifying the substitutive

5 broadcast data;

trying, by the second receiver that includes a storing unit for storing therein an identifier specifier for specifying the substitutive identifier, to obtain the substitutive broadcast data based on the substitutive identifier specified

10 by the identifier specifier; and

reproducing, at the reproduction start time, only the broadcast data if successfully obtained, and reproducing, at the reproduction start time, the substitutive broadcast data only if the broadcast data has not been obtained and only the

15 substitutive broadcast data has been obtained.